

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A method for manufacturing a semiconductor device, the method comprising the steps of:

forming a stress relief layer on a wafer such that the stress relief layer is away from at least part of electrodes formed on the wafer;

forming a wiring layer consisting of wiring extending over the stress relief layer in which lines that extend from the electrodes to the stress relief layer are formed;

forming outer electrodes that are over predetermined portions of the wiring layer to electrically connect the outer electrodes to the stress relief layer and are connected to the lines in the wiring layer over the stress relief layer wherein the method further comprises the step of; and

forming a dielectric layer by applying dielectric liquid by an inkjet method on the predetermined portions in the lines where the outer electrodes are connected to form a capacitor, after the step of forming the wiring layer, such that the dielectric layer and the outer electrodes form capacitors above the stress relief layer.

2. (currently amended) A method for manufacturing a semiconductor device according to Claim 1, wherein the method further comprises ~~comprising~~ the steps of:

forming a protective film on the wiring layer, after the step of forming the wiring layer; and

forming ~~an opening~~ openings in at least part of the protective film, corresponding to the predetermined portions of the wiring layer where outer electrodes, before the step of forming the outer electrodes are to be formed,

~~and wherein applying the dielectric liquid is applied to the openings~~ by the inkjet method ~~to form to the opening forms~~ the dielectric layer in the step of forming the dielectric layer.

3. (original) A method for manufacturing a semiconductor device according to Claim 1, the method further comprising the step of sintering the dielectric layer after the step of forming the dielectric layer.

4. (currently amended) A method for manufacturing a semiconductor device according to Claim ~~3~~4, the method further comprising the steps of:

~~sintering the dielectric layer; and~~

forming a conductive layer by applying conductive liquid by the inkjet method ~~onto~~ the sintered dielectric layer, the steps being conducted after the step of ~~sintering~~forming the dielectric layer.

5. (currently amended) A method for manufacturing a semiconductor device according to Claim 1, wherein, in the step of forming the dielectric layer, ~~controlling the~~ number of times the dielectric liquid is discharged with a discharge head for applying the dielectric liquid by the inkjet method is controlled to control the thickness of the dielectric layer ~~and form the capacitors forms a capacitor~~ having a desired capacitance.

6. (currently amended) A method for manufacturing a semiconductor device according to Claim 1, wherein the method further ~~comprises~~comprising the step of forming multiple wiring layers in which stress relief layers and wiring layers are alternately ~~laminated~~deposited, and adjacent wiring layers are electrically connected to each other with intervention of a dielectric layer sandwiched between the wiring layer

~~and the outer electrodes, and the lines on the top wiring layer are connected to the outer electrodes, the step being conducted after the step of forming the wiring layer, wherein, in the step of forming the multiple wiring layers, forming the dielectric layer between the wiring layers at portions where the adjacent wiring layers are electrically connected to each other or between the top wiring layer and the outer electrodes in the multiple wiring layers forms the capacitor.~~

7. (currently amended) A method for manufacturing a semiconductor device, the method comprising the steps of:

forming a stress relief layer on a wafer such that the stress relief layer is away from at least part of electrodes formed on the wafer;

forming a wiring layer consisting of wiring extending over the stress relief layer ~~in which lines that extend from the electrodes to the stress relief layer are formed;~~

forming outer electrodes over predetermined portions of the wiring layer to electrically connect the outer electrodes to ~~that are over the stress relief layer and are connected to the lines in the wiring layer~~ over the stress relief layer; and

forming on the stress relief layer an inductor, which ~~that~~ is electrically connected to the wiring layer ~~lines~~ by applying conductive liquid in a spiral pattern by an inkjet method, after the step of forming the wiring layer.

8. (currently amended) A method for manufacturing a semiconductor device according to Claim 7, the method further comprising the steps of:

forming a protective film on the wiring layer, after the step of forming the wiring layer; and

forming a spiral open pattern corresponding to the inductor in ~~on~~ the protective film, before the step of forming the inductor,

wherein ~~applying the conductive liquid~~ is applied to the open pattern by the inkjet method to form ~~the open pattern forms~~ the inductor in the step of forming the inductor.

9. (currently amended) A method for manufacturing a semiconductor device according to Claim 7, further comprising the step of roughening the surface of the stress relief layer in a spiral pattern before the step of forming the inductor,

wherein, in the step of forming the inductor, ~~applying the conductive liquid~~ is applied to the roughened surface of the stress relief layer by the inkjet method ~~to the spiral pattern where the surface of the stress relief layer is roughened forms~~ to form the inductor.

10. (original) A method for manufacturing a semiconductor device according to Claim 9, wherein the step of roughening the surface of the stress relief layer is conducted by laser abrasion or sandblasting.

11. (currently amended) A method for manufacturing a semiconductor device according to Claim 7, wherein, in the step of forming the inductor, ~~controlling the number of times the conductive liquid is discharged with a discharge head for applying the conductive liquid by the inkjet method~~ is controlled to control the thickness of the conductive layer and form~~forms~~ the inductor having a desired resistance.

12. (currently amended) A method for manufacturing a semiconductor device according to Claim 7, wherein, in the step of forming the inductor, ~~controlling the operation of a discharge head for applying the conductive liquid by the inkjet method~~ is controlled to control the number of turns in the spiral pattern and form~~forms~~ the inductor having a desired inductance.

13. (currently amended) A method for manufacturing a semiconductor device according to Claim 7, wherein the method further ~~comprises~~comprising the step of forming multiple wiring layers in which stress relief layers and wiring layers are alternately ~~laminated~~deposited, and adjacent wiring layers are electrically connected to each other, ~~and the lines on the top wiring layer are connected to the outer electrodes, the step being conducted after the step of forming the wiring layer,~~
~~wherein, in the step of forming the multiple wiring layers, applying the conductive liquid in the spiral pattern by the inkjet method forms at least one wiring layer in the multiple wiring layers to form the inductor.~~

14. (currently amended) A method for manufacturing a semiconductor device, the method comprising the steps of:

forming a stress relief layer on a wafer such that the stress relief layer is away from at least part of electrodes formed on the wafer;

forming a wiring layer consisting of wiring extending over the stress relief layer~~in which lines that extend from the electrodes to the stress relief layer are formed;~~

forming outer electrodes ~~that are over~~ predetermined portions of the wiring layer to electrically connect the outer electrodes to the wiring layer wherein the method further comprises the step of:~~the stress relief layer and are connected to the lines in the wiring layer; and~~

forming multiple wiring layers in which stress relief layers and wiring layers are alternately ~~deposited~~laminated, adjacent wiring layers are electrically connected to each other, ~~and the lines on the top wiring layer are connected to the outer electrodes, the step being conducted after the step of forming the wiring layer,~~

wherein the step of forming the multiple wiring layers includes the step of forming

a filter having at least one capacitor that has a dielectric layer between the wiring layers at the portions where the adjacent wiring layers are electrically connected to each other or between the top wiring layer and the outer electrodes and at least one inductor that is at least one wiring layer formed in a spiral pattern in the multiple wiring layers, and

wherein, in the step of forming the filter, applying dielectric liquid by an inkjet method forms the dielectric layer and applying conductive liquid in the spiral pattern by the inkjet method forms the inductor.

15. (currently amended) A method for manufacturing a semiconductor device, the method comprising the steps of:

forming a stress relief layer on a wafer such that the stress relief layer is away from at least part of electrodes formed on the wafer;

forming a wiring layer consisting of wiring extending over the stress relief layer~~in which lines that extend from the electrodes to the stress relief layer are formed;~~

forming outer electrodes ~~that are over~~ predetermined portions of the wiring layer to electrically connect the outer electrodes to the stress relief layer and are connected to the lines in the wiring layer over the stress relief layer; and

forming multiple wiring layers in which stress relief layers and wiring layers are alternately ~~deposited~~ laminated, and adjacent wiring layers are electrically connected to each other, ~~and the lines on the top wiring layer are connected to the outer electrodes,~~ the step being conducted after the step of forming the wiring layer,

wherein, in the step of forming the multiple wiring layers, the wiring layer on one face of the top stress relief layer is formed to be a ground plane such that lines having a microstrip line structure are formed in the wiring layer on the other face of the top stress relief layer, and

wherein the step of forming the multiple wiring layers includes the step of forming

a plurality of strip lines that are electromagnetically coupled to each other and are spaced at predetermined intervals by applying conductive liquid by an inkjet method to the lines having the microstrip line structure to form a bandpass filter.

16. (original) A semiconductor device manufactured by the methods according to Claim 1.